

**WHAT IS CLAIMED IS:**

1. An apparatus comprising:  
a backplane comprising  
a plurality of slots, the plurality of slots comprising at least one extended slot and at least two normal slots, each normal slot comprising a first set of connectors, each extended slot comprising the first set of connectors and an additional, second set of connectors; and  
signal lines connecting the connectors of the extended and normal slots to support at least one data channel between the first set of connectors of each of one or more of the at least one extended slot and the first set of connectors of each of one or more of the at least two normal slots, and to support at least one data channel between the second set of connectors of each of one or more of the at least one extended slot and the first set of connectors of each of one or more of the at least two normal slots.
2. The apparatus of claim 1, wherein each of the plurality of slots comprises a first set of connectors designed according to a common specification, the common specification comprising Peripheral Component Interconnect Industrial Computer Manufacturers Group 3.0 Advanced Telecommunications Computing Architecture (PICMG 3.0 AdvancedTCA) specification.
3. The apparatus of claim 2, wherein the first set of connectors includes zone 2 connectors that are compatible with the PICMG 3.0 AdvancedTCA specification.

4. The apparatus of claim 3, wherein the second set of connectors of each extended slot couple with zone 3 connectors of circuit boards that are compatible with the PICMG 3.0 AdvancedTCA specification.

5. The apparatus of claim 1, wherein the plurality of slots are spaced apart along a first direction, each slot extending along a second direction at an angle to the first direction, the first and second set of connectors of each extended slot being spaced apart along the second direction.

6. The apparatus of claim 1, wherein the backplane has a shape that resembles a letter T or an inverted T.

7. The apparatus of claim 1, further comprising at least two line cards that interface with at least two normal slots.

8. The apparatus of claim 7, further comprising at least one switch card that interfaces with the at least one extended slot.

9. The apparatus of claim 8, wherein the line card and the switch card each includes an interface logic to support the data channels between the line card and the switch card.

10. The apparatus of claim 9, wherein the interface logic includes a serializer/deserializer (SERDES) interface.

11. The apparatus of claim 10, wherein the signal lines support data channels between the at least two line cards and the at least one switch card to form at least one of a full-

mesh, star, dual-star, and dual-dual-star switch fabric topology.

12. The apparatus of claim 10, wherein the signal lines support data channels between the at least two line cards and the at least one switch card to form any one of a full-mesh, star, dual-star, and dual dual-star switch fabric topology based on configurations of the line cards and the switch card.

13. The apparatus of claim 1, wherein the backplane comprises ten normal slots and four extended slots.

14. The apparatus of claim 1, wherein the backplane comprises twelve normal slots and two extended slots.

15. The apparatus of claim 1, wherein the signal lines include electric conductors.

16. The apparatus of claim 1, wherein the signal lines include optical waveguides.

17. An apparatus comprising:  
a circuit board in compliance with Peripheral Component Interconnect Industrial Computer Manufacturers Group 3.0 Advanced Telecommunications Computing Architecture (PICMG 3.0 AdvancedTCA) specification comprising connectors in Zone 3 to support a fabric interface.

18. The apparatus of claim 17, wherein the circuit board comprises a switch card.

19. The apparatus of claim 18, wherein the connectors in Zone 3 support up to 15 data channels between the switch card and other circuit boards, zone 3 being specified in the PICMG 3.0 AdvancedTCA specification.

20. The apparatus of claim 19, wherein the connectors comprise ZD connectors.

21. The apparatus of claim 19, further comprising serializer/deserializers to support the data channels.

22. The apparatus of claim 19, wherein each data channel is supported by four 2.5 Gbs interfaces to provide up to 10 Gbs bandwidth.

23. A switching system comprising:

line cards;

at least one switch card; and

a backplane comprising an extended slot to interface with the at least one switch card to enable one of multiple switch fabric topologies, the extended slot comprising a first set of connectors and a second set of connectors, the backplane to support a first switching bandwidth when the switch card utilizes both the first and second set of connectors and to support a second switching bandwidth when the switch card utilizes the first set of connectors and not the second set of connectors.

24. The apparatus of claim 23, wherein the switching system is compatible with Peripheral Component Interconnect Industrial Computer Manufacturers Group 3.0 Advanced

Telecommunications Computing Architecture (PICMG 3.0 AdvancedTCA) specification.

25. The apparatus of claim 24, wherein the first set of connectors comprise Zone 2 connectors, and the second set of connectors comprise Zone 3 connectors, zone 2 and zone 3 being specified in the PICMG 3.0 AdvancedTCA specification.

26. The apparatus of claim 23, wherein the backplane supports at least one of a full-mesh, star, dual-star, and dual-dual-star switch fabric topology.

27. A method comprising:

routing signals through connectors positioned at a first region of a switch card, the connectors positioned at the first region being specified according to a predefined specification; and

increasing a switching bandwidth of the switch card by routing data through connectors positioned at a second region of the switch card, where the predefined specification specifies that connectors at the second region support user defined functions.

28. The method of claim 27, wherein the predefined specification includes Peripheral Component Interconnect Industrial Computer Manufacturers Group 3.0 Advanced Telecommunications Computing Architecture (PICMG 3.0 AdvancedTCA) specification.

29. The method of claim 28, wherein the first region includes zone 2, and the second region includes zone 3, zone 2 and zone 3 being specified in the PICMG 3.0 AdvancedTCA specification.

30. The method of claim 27, further comprising enabling at least one of a full-mesh, star, dual-star, and dual-dual-star switching topology.